

- d) unmediatedly laminating the inner surface of the leather layer onto the functional layer by joining the adhesive powder together between the leather layer and the functional layer; and
- e) wherein the laminate has a water vapor transmission resistance (Ret) of less than 600×10^{-3} (m^2 mbar)/W and a crumple flex durability of at least 50,000 cycles.

REMARKS

Claims 1-37 are pending and stand rejected. Claims 1, 4, 7, 8, 16, 22, and 27 have been amended and claim 30 has been cancelled without prejudice or disclaimer. Thus, claims 1-29 and 31-37 remain pending after entry of the above amendment. Reconsideration is respectfully requested in view of the above amendments and the following remarks.

The disclosure was objected to because of the presence of several misspelled words. Applicant appreciates the Examiner pointing out the typographical errors, and by the above amendment these typographical errors have been corrected. Thus, this objection has been overcome.

Claims 4, 7, and 8 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner points out that the claims are in improper Markush group form. By way of the above amendment, the claims have been amended to overcome this rejection.

Claims 1-4, 6-12, 15-28 and 35-37 stand rejected under 35 U.S.C. §102(b) as being anticipated by Driskill et al. Applicant respectfully traverses this rejection.

Applicant respectfully asserts that Driskill et al. fail to disclose every element of the currently claimed invention. Thus, the §102 rejection must fail. Specifically, applicant claims a laminate comprising, among other things, at least one leather layer which has been openly hydrophobicized, wherein the openly hydrophobicized leather layer is laminated with its inner surface unmediatedly onto one side of a functional layer using a powder adhesive. Applicant submits that Driskill et al. fail to disclose or suggest at least the use of an openly hydrophobicized leather layer and the use of a powder adhesive to form a laminate. Independent claim 27

(and the claims dependent thereon) also include the limitations of the use of an adhesive powder and an openly hydrophobicized leather layer. Thus, the §102 rejection fails for these claims as well.

In paragraph 9 of the Action, the Examiner contends that although Driskill et al. do not explicitly teach the claimed water vapor transmission resistance and the claimed crumple flex durability, that it is reasonable to presume that such values are inherent to Driskill et al. The Examiner contends that support for said presumption is found in the use of like materials (i.e., same laminate structure with leather and ePTFE) which would result in the claimed property. Applicant respectfully disagrees with the Examiner's conclusion.

Driskill et al. do not use like materials which would result in the claimed properties. As noted above, Driskill et al. fail to disclose or suggest the use of both a powder adhesive and an openly hydrophobicized leather layer. As discussed, for example, at page 5, lines 25 through 37 of the specification, open hydrophobicization means that the leather layer has been rendered water resistant without breathability of the leather layer having been lost. This is achieved by using hydrophobicizer such as, for example, fluorocarbons or polysiloxanes, which envelope the individual leather fibers with hydrophobic end groups to render them water repellent. The interstitial spaces between the leather fibers, however, remain open and continue to allow water vapor to pass through. Preferably, hydrophobicizers based on fluorocarbons are used. Thus, it cannot be concluded that Driskill et al. use like materials which would result in the claimed properties.

Moreover, applicant notes that the only example in Driskill et al. which shows laminating leather to an ePTFE functional layer is Example 4 of the patent. Upon study of Example 4 of Driskill et al., it can be seen that there is no mention of the use of openly hydrophobicized leather, nor is there any mention of the use of a powder adhesive to laminate the cowhide leather to the ePTFE functional layer. Further, as noted at column 12, line 67 through column 13, line 4, although the laminate of this example had a moisture vapor transmission rate of 1186 g/m²X24 hours, indicating that a moisture permeable laminate was made, in bond strength testing, the laminate showed cohesive adherent failure in both the dry and the wet peel tests. Therefore, one skilled in the art would know that the leather/ePTFE functional layer laminate disclosed by Driskill et al. would not inherently result in a laminate having a crumple flex durability of at least 50,000 cycles.

In view of the above comments, applicant respectfully requests that the §102 rejection be withdrawn.

Claims 13 and 14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Driskill et al. Applicant respectfully traverses this rejection.

For at least the above stated reasons, applicant respectfully submits that this rejection must fail, since Driskill et al. fail to disclose or suggest the use of the claimed openly hydrophobicized leather layer in combination with a powder adhesive to form the claimed laminate of the present invention, as well as the claimed process for making the same. Accordingly, applicant submits that this rejection should be withdrawn.

Claims 5 and 29-34 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Driskill et al. in view of McConnell et al. Applicant respectfully traverses this rejection.

Applicant submits that McConnell et al. fail to provide the deficiencies of Driskill et al., noted above. Moreover, even a combination of these two references would not result in rendering the claimed invention obvious. Accordingly, applicant submits that this rejection should be withdrawn.

Claims 8 and 9 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Driskill et al., further in view of Peter. The Examiner in this paragraph notes that Driskill et al. do not disclose the use of a hydrophobicizer. The Examiner asserts that Peter discloses a hydrophobitzing impregnating spray providing for leather containing a fluorocarbon resin. The Examiner concludes that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the laminate of Driskill et al. and provide it with a water repellent coating that includes the fluorocarbon of Peter with the motivation of having a porous material that will repel water while allowing the material to breath. Applicant respectfully traverses this rejection.

Applicant submits that Peter discloses an impregnating spray for leather and textiles which contains: an active agent consisting of a fluorocarbon resin, water and/or a water-miscible solvent, a hydrophobicizing agent based on polyacrylates, and optionally auxiliaries; and water-miscible or emulsifiable propellants. Although Peter discloses that an impregnation spray based on

fluorocarbon resin can be used to treat leather, it does not render obvious the presently claimed invention. Specifically, applicant submits that one skilled in the art would not be motivated to take an openly hydrophobicized leather layer and attempt to laminate it to an already liquid water-resistant and water-vapor permeable functional layer. Applicant submits that one skilled in the art would expect that the use of a hydrophobicizing agent, such as a fluorocarbon, would actually result in the leather layer being more difficult to adhere to a substrate, as compared to the untreated leather. Thus, one would not be motivated to attempt to laminate an openly hydrophobicized leather layer to a functional layer, such as ePTFE. Furthermore, one skilled in the art clearly would not expect to obtain the claimed water vapor transmission resistance and crumple flex durability values of the instant invention. Since one skilled in the art would expect that the use of a hydrophobicizer such as a fluorocarbon would result in difficulty in laminating the hydrophobicized leather layer to a functional layer, applicant submits that the claimed crumple flex durability value is indeed quite surprising. Furthermore, this is further surprising since the claimed laminant maintains an exceptionally good vapor transmission resistance of less than 600×10^{-3} $(m^2 mbar)/W$.

For at least the above reasons, applicant submits that the above rejection should be withdrawn.

As all of the outstanding rejections have been addressed and overcome, applicant respectfully requests the issuance of a favorable action on the merits. Should the Office have any questions, the Office is invited to telephone applicant's undersigned representative.

Respectfully submitted,



Kevin J. Boland, 36,090
W. L. Gore & Associates, Inc.
551 Paper Mill Road
P.O. Box 9206
Newark, DE 19714-9206
(302) 738-4880

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CLEAN VERSION OF AMENDED CLAIMS PURSUANT TO RULE 121(c)(3):

- B1 1. A laminate comprising:
a liquid water resistant and water vapor permeable functional layer,
and at least one leather layer having an outer surface and an inner
surface,
wherein the leather layer is openly hydrophobicized and
is laminated with its inner surface unmediatedly onto one side of the
functional layer using a powder adhesive,
the laminate having a water vapor transmission resistance (Ret) of less
than 600×10^{-3} ($\text{m}^2 \text{ mbar}$)/W and a crumple flex durability of at least 50,000
cycles.

B2 4. The laminate of claim 3, wherein the adhesive is selected from the group
consisting of polyurethanes, polyesters, and polyamides.

B3 7. The laminate of claim 4, wherein the adhesive is a mixture of adhesives
selected from the group consisting of polyurethanes, polyesters, and polyamides.

8. The laminate of claim 1, wherein the leather layer has been saturated with
a hydrophobicizer selected from the group consisting of the fluorocarbons,
silicones and polysiloxanes.

B4 16. The laminate of claim 15, having a water vapor transmission resistance
(Ret) of less than 300×10^{-3} ($\text{m}^2 \text{ mbar}$)/W.

B5 22. The laminate of claim 1, wherein the functional layer is selected from the
group of substances consisting of polyesters, polyamides, polyolefins including
polyethylene and polypropylene, polyvinyl chloride, polyketones, polysulfones,
polycarbonates, fluoropolymers including polytetrafluoroethylene (PTFE),
polyacrylates, polyurethanes, copolyether esters, and copolyetheramides.

B6 27. A process for producing a laminate comprising the following steps:
a) providing an openly hydrophobicized leather layer having an inner
surface and an outer surface;

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- b) providing a liquid water resistant and water vapor permeable functional layer;
 - c) providing an adhesive powder for bonding the leather layer and the functional layer together adhesively;
 - d) unmediatedly laminating the inner surface of the leather layer onto the functional layer by joining the adhesive powder together between the leather layer and the functional layer; and
 - e) wherein the laminate has a water vapor transmission resistance (Ret) of less than 600×10^{-3} (m^2 mbar)/W and a crumple flex durability of at least 50,000 cycles.
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CLEAN VERSION OF ALL CLAIMS

1. A laminate comprising:
 - a liquid water resistant and water vapor permeable functional layer, and at least one leather layer having an outer surface and an inner surface,
 - wherein the leather layer is openly hydrophobicized and is laminated with its inner surface unmediatedly onto one side of the functional layer using a powder adhesive,
 - the laminate having a water vapor transmission resistance (Ret) of less than 600×10^{-3} (m^2 mbar)/W and a crumple flex durability of at least 50,000 cycles.
2. The laminate of claim 1, wherein the inner surface of the leather layer is the flesh side of the leather.
3. The laminate of claim 1, wherein an adhesive is situated between the functional layer and the leather layer to bond the functional layer and the leather layer together adhesively.
4. The laminate of claim 3, wherein the adhesive is selected from the group consisting of polyurethanes, polyesters, and polyamides.
5. The laminate of claim 4, wherein the adhesive is a copolyester or a copolyamide.
6. The laminate of claim 4, wherein the adhesive is a polyurethane.
7. The laminate of claim 4, wherein the adhesive is a mixture of adhesives selected from the group consisting of polyurethanes, polyesters, and polyamides.
8. The laminate of claim 1, wherein the leather layer has been saturated with a hydrophobicizer selected from the group consisting of fluorocarbons, silicones and polysiloxanes.
9. The laminate of claim 8, wherein the hydrophobicizer is a fluorocarbon.

10. The laminate of claim 1, wherein the leather layer comprises natural leather.
11. The laminate of claim 1, wherein the leather layer comprises a leather substitute.
12. The laminate of claim 1, wherein the leather layer has a spray rating greater than 70%.
13. The laminate of claim 1, wherein the leather layer has a thickness of between 0.8 mm and 2 mm.
14. The laminate of claim 13, wherein the leather layer has a thickness of between 1 mm and 1.5 mm.
15. The laminate of claim 1 having a water vapor transmission resistance (Ret) of less than 400×10^{-3} ($\text{m}^2 \text{ mbar}$)/W.
16. The laminate of claim 15, having a water vapor transmission resistance (Ret) of less than 300×10^{-3} ($\text{m}^2 \text{ mbar}$)/W.
17. The laminate of claim 1, wherein the leather layer after complete immersion in deionized water for 1 hour increases by less than 50% in weight compared with a dry laminate.
18. The laminate of claim 17, wherein the leather layer after complete immersion in deionized water for 1 hour increases by less than 10% in weight compared with a dry laminate.
19. The laminate of claim 1, wherein the functional layer comprises a textile sheet material which is laminated onto the other side of the functional layer.
20. The laminate of claim 19, wherein the textile sheet material is a woven fabric, a consecutive course formation knitted fabric, a nonwoven fabric or a synchronous course formation knitted fabric.

21. The laminate of claim 1, wherein the functional layer is a membrane or a film.
22. The laminate of claim 1, wherein the functional layer is selected from the group of substances consisting of polyesters, polyamides, polyolefins including polyethylene and polypropylene, polyvinyl chloride, polyketones, polysulfones, polycarbonates, fluoropolymers including polytetrafluoroethylene (PTFE), polyacrylates, polyurethanes, copolyether esters, and copolyetheramides.
23. The laminate of claim 22, wherein the functional layer is expanded PTFE.
24. The laminate of claim 1, wherein the laminate is waterproof at a water pressure of greater than 0.13 bar.
25. The laminate of claim 1, wherein the leather layer has an abrasion resistance of <3 by the Darmstadt method.
26. Apparel comprising a laminate as claimed in any of claims 1-25, wherein the outer surface of the leather layer faces away from the body.
27. A process for producing a laminate comprising the following steps:
 - a) providing an openly hydrophobicized leather layer having an inner surface and an outer surface;
 - b) providing a liquid water resistant and water vapor permeable functional layer;
 - c) providing an adhesive powder for bonding the leather layer and the functional layer together adhesively;
 - d) unmediatedly laminating the inner surface of the leather layer onto the functional layer by joining the adhesive powder together between the leather layer and the functional layer; and
 - e) wherein the laminate has a water vapor transmission resistance (Ret) of less than 600×10^{-3} (m^2 mbar)/W and a crumple flex durability of at least 50,000 cycles.
28. The process of claim 27, wherein the adhesive is continuously inserted.
29. The process of claim 27, wherein the adhesive is applied in dot form.

30. Cancelled.
31. The process of claim 27, wherein the adhesive is applied to one side of the functional layer prior to step b).
32. The process of claim 31, wherein the inner surface of the leather layer is laminated onto the adhesive-provided side of the functional layer.
33. The process of claim 27, wherein the inner surface of the leather layer is provided with an adhesive prior to step a).
34. The process of claim 33, wherein the functional layer is laminated onto the adhesive-provided inner surface of the leather layer.
35. The process of claim 28, wherein the adhesive is inserted as a continuous single adhesive layer between the functional layer and the leather layer.
36. The process of claim 27, wherein the adhesive is selected from the group of the polyurethanes, polyesters, polyamides.
37. The process of claim 36, wherein the adhesive is a polyurethane.